

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Richard A. Blanchard  
Application No.: Unassigned  
Date Filed: Filed Herewith  
Title: POWER SEMICONDUCTOR DEVICE HAVING A VOLTAGE  
SUSTAINING REGION THAT INCLUDES DOPED COLUMNS FORMED  
WITH A SINGLE ION IMPLANTATION STEP  
Group Art: 2814  
Examiner: Unassigned  
Docket: GS 159 D1

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INFORMATION DISCLOSURE STATEMENT (IDS)

Mail Stop Patent  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22231-1450

SIR:

In accordance with 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §§1.97 and 1.98, the references listed on attached Form PTO/SB/08 and/or subsequently identified herein, are being submitted herewith for consideration by the United States Patent and Trademark Office.

I. COPIES

- a. ☐ A legible copy of (i) each U.S. and foreign patents; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed, is included herewith.
- b. ☒ Any patents, publications or other information which are listed on PTO/SB/08 which are not enclosed herewith were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. §120:

U.S. Serial Number  
10/103,674

U.S. Filing Date  
03/21/2002

II. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

- a. ☒ Except as may be indicated below in (b) of this section, all of the patents, publications or other information are in the English language (concise explanation not required).
- b. ☐ A concise explanation of the relevance of all patents, publications or other information listed that is not in the English language is as follows:
- c. ☐ The following additional information is provided for the Examiner's consideration:

III. ☐ CROSS REFERENCE TO RELATED APPLICATION(S)

The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this (these) applications to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. §122.

Serial No.

Filing Date

Art Unit

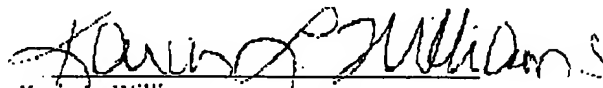
## FEES

- IV. ☒ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(b): (check one box)
- a. ☒ within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. §1.97(b)(1)). No fee or statement is required.
  - b. ☐ within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. §1.97(b)(2)). No fee or statement is required.
  - c. ☐ before the mailing date of a first Office Action on the merits (37 C.F.R. §1.97(b)(3)). No fee or statement is required.
  - d. ☐ before the mailing date of a first Office Action after the filing of a request for continued examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.
- V. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(c): (check one box)  
before the mailing date of any of a Final Office Action under 37 C.F.R. §1.113, a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in the application (See 37 C.F.R. §1.97(c)).
- a. ☐ No statement; therefore, charge deposit account 50-1047 the fee set forth in 37 C.F.R. §1.17(p).
  - b. ☐ See the statement below. No fee is required.
- VI. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(d):  
on or before payment of the issue fee and is accompanied by the following:
- 1) a statement under 37 C.F.R. §1.97(e) as provided below; and
  - 2) charge deposit account 50-1047 the petition fee set forth in §1.17(p).
- VII. ☐ STATEMENT UNDER 37 C.F.R. §1.97(e) (check only one box, if applicable)  
The undersigned hereby states that
- a. ☐ each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of IDS; or
  - b. ☐ no item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and to knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement, or
  - c. ☐ some of the items of information contained in the IDS were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement.
- VIII. PAYMENT OF FEES
- ☐ A check in the amount of \_\_\_\_\_ is enclosed for the above-identified fee(s).
  - ☐ Please charge Deposit Account No. 50-1047 in the amount of \$180.00 for the above-indicated fee(s).
  - ☒ If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 50-1047.
  - ☐ Two Copies of this paper are attached for Deposit Account charges and debits.

It is Applicant(s)' opinion that the claims presently on file patently distinguish the present invention from each of these references. The above references are being cited only in the interests of candor and without any admission that they constitute statutory prior art or contain matter which anticipates the invention or which would render the same obvious, either singly or in a combination, to a person of ordinary skill in the art.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 50-1047.

Respectfully submitted,  
Mayer Fortkort & Williams, PC



Karin L. Williams  
Attorney for Applicant  
Reg. No. 36,721  
Tel. 908-518-7700

Mayer Fortkort & Williams, PC  
Customer Number 27774

Enclosures: ☒ PTO/SB/08  
☐ References  
☐ Foreign Search Report  
☐ Other:

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Marjorie Scariati

(Printed name of Person Mailing Correspondence)

Marjorie Scariati  
(Signature)

Please type a plus sign (+) inside this box. FORM PTO/SB/08

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>			<i>Complete if Known</i>		
			Application Number	Unassigned	
			Filing Date	Filed Herewith	
			First Named Inventor	Richard A. Blanchard	
			Group Art Unit	2814	
Examiner Name	Unassigned				
Sheet	1	of	2	Attorney Docket Number	GS 159 D1

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYYY
		Number	Class/Subclass		
	1	4,893,160	257/334	Blanchard	01-09-1990
	2	5,216,275	257/493	Chen	06-01-1993
	3	6,319,777	438/270	Huetting et al.	11-20-2001
	4	6,649,459	438/173	Deboy et al.	11-18-2003
	5	4,914,058	438/270	Blanchard	04-03-1990
	6	6,376,878	257/328	Kocon	04-23-2002
	7	6,576,516	438/268	Blanchard	06-10-2003
	8	6,475,864	438/268	Sato et al	11-05-2002
	9	6,509,240	438/302	Ren et al.	01-21-2003
	10	6,476,429	257/273	Baba	11-05-2002
	11	6,509,220	438/197	Disney	01-21-2003
	12	6,639,272	257/328	Ahlers et al.	10-28-2003
	13	US-2001-0046739	438/268	Miyasaka et al.	11-29-2001
	14	US-2002-0123195	438/268	Frisina et al.	09-05-2002

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T
		Office <sup>3</sup>	Number	Class/ Subclass			
	1	JP	2002-353447	H01L 29/78	Fujishima	12-2002	
Examiner Signature					Date Considered		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	Unassigned
				Filing Date	Filed Herewith
				First Named Inventor	Richard A. Blanchard
				Group Art Unit	2814
Sheet	2	of	2	Examiner Name	Unassigned
				Attorney Docket Number	GS 159 D1

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1	Cezac, N., "A New Generation of Power Unipolar Devices: the Concept of the Floating Islands MOS Transistor," Proceedings of the 12 <sup>th</sup> International Symposium on Power Semiconductor Devices and ICs, May 2000, pp. 69-72.	X
	2	Chen, X. et al., "A Novel High-Voltage Sustaining Structure With Buried Oppositely Doped Regions," IEEE Transactions on Electron Devices, Vol. 47, No. 6, June 2000, pp. 1280-1285.	X
	3	Deboy, G. et al., "A New Generation of High Voltage MOSFETs Breaks The Limit Line Of Silicon," Proceedings of the IEDM, No. 26.2.1, December 6-9, 1998, pp. 683-685.	X

Examiner Signature		Date Considered	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

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